

A photograph of an industrial facility, possibly a refinery or chemical plant, with various pipes, tanks, and structural elements. The image is overlaid with a semi-transparent blue filter. The word "rely" is written in white lowercase letters, and "on" is written in red lowercase letters, with a red arrow pointing from the "o" in "on" back to the "y" in "rely".

rely on

The power of the Digital Twin and Building Information Modeling

Linxon's digital ecosystem delivers projects in a consistent, predictable and efficient fashion. Building Information Modeling (BIM), Augmented Reality and LiDar are deployed in many of our projects from engineering through execution and commissioning.

linxon

What is a digital twin?

A digital twin is a virtual representation of an object or system that spans its lifecycle, is updated from real-time data, and uses simulation, machine learning and reasoning to help stakeholder engagement and decision-making.

An environment transforming the design and execution of substations

Digitalization involves generating and managing simulated representations captures attributes of assets such as physical dimensions, part numbers, manufacturing and origins, and testing processes. The true power of digitalization resides in its dynamic capacity for creating information-rich models for the entire lifecycle of a project, thus improving both its design and execution precision.

By creating



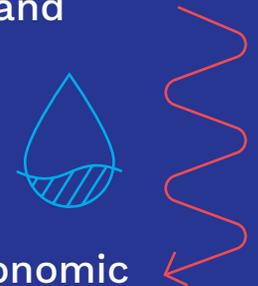
a substation

DIGITAL
TWIN

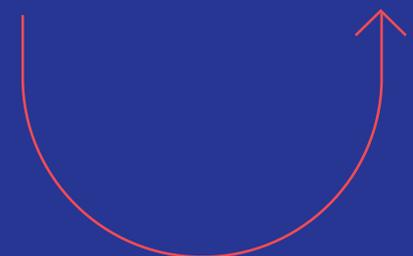
we make

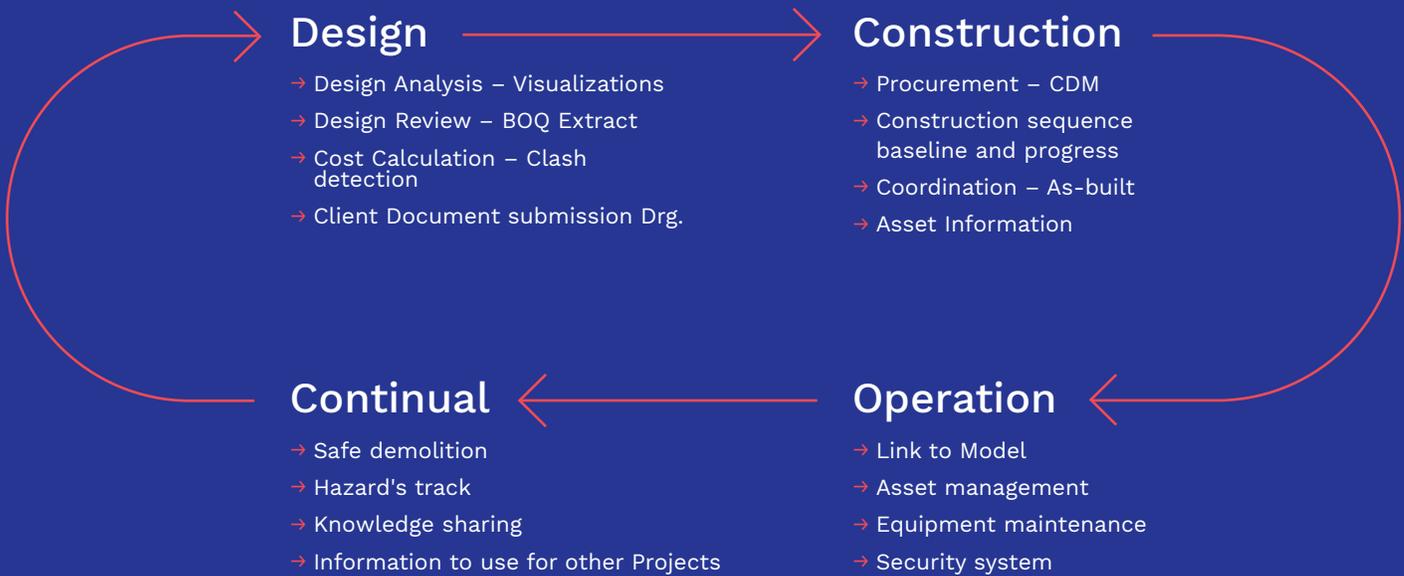
BETTER

environmental,
social, and



and economic
sustainability
decisions.





How does BIM fit within the digital ecosystem?

Starting from the traditional 3D for spatial representation, many other features enrich the usefulness of BIM.

1D Strategy

Research and planning of a project, conditions, regulations, estimations etcetera

2D Drawing

All bidimensional views and drawings, plans, sections, elevation and other project documentation

3D Modelling

Graphic representation of the BIM model in three dimensions space

4D Timeline

Construction activity visualization and analysis

5D Cost

Detail cost estimation and control during planning, construction, and operating phases

6D Performance

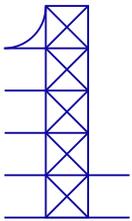
Evaluation of energy consumptions, environmental impact, pollution risks, etcetera

7D Facility

Management and maintenance organization for the entire life cycle

8D Safety

Operators' risks inspection, critical hazardous scenarios prevention, etcetera

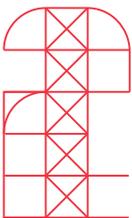


Visualize projects in preconstruction

BIM allows our teams to plan and visualize the entire project lifecycle during the preconstruction phase. We can thus coordinate with multiple disciplines, ensure precise planning, identify potential challenges before they arise, reduce project risks, and ensure safety is not compromised along the way. Everything even before any shovel hits the ground.

Another great benefit lies in the active involvement of our clients from the beginning. As they experience what the final product will look like, we offer them the ability to outline its exact features, and give the possibility to make changes through space simulations.

This broader overview is vital to minimize costly changes, optimize the project schedule, speed up decision-making, and improve predictability.

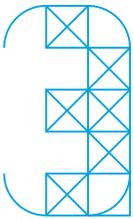
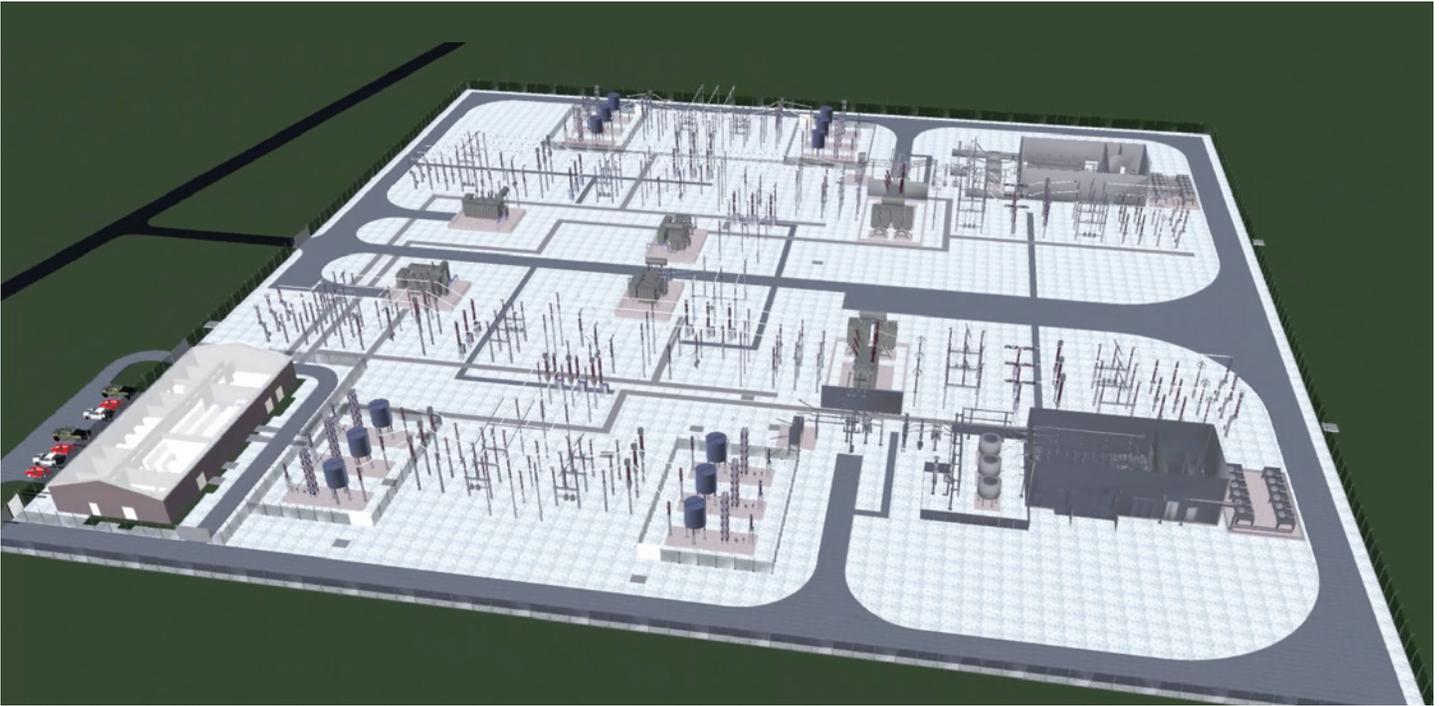


Improve project collaboration and communication

Given their digital nature, BIM models allow the project team to share, collaborate, and create versions in real-time. By using a federated model approach we are able to take several different models from each discipline and combine them into one model to create a single source of information with built-in controls tracking any and all changes.

Each discipline-specific model contains all the non-graphic 3D details necessary for the correct representation of the project. Moreover, BIM also enables rapid 2D drawings generation from any perspective and instant Bill Of Materials (BOM) reports.

This way, the project team can easily see and understand any change and submit accurate and up-to-date information for permit requests, management approvals, and sharing with our suppliers or contractors.

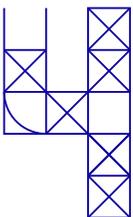


More precise scheduling and sequencing

Including time-related information into our BIM models allows us to create a more detailed schedule that improves overall project coordination. In the design stage, the project team can develop a sequence of phases to automatically include traditional construction documents, such as plans, sections, elevations, or details, through the parametric visualization of a 3D model of construction sequences.

In the execution phase, the modeling can provide all stakeholders with a better idea of planned construction sequences, track ongoing construction sequences remotely, and compare them.

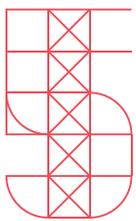
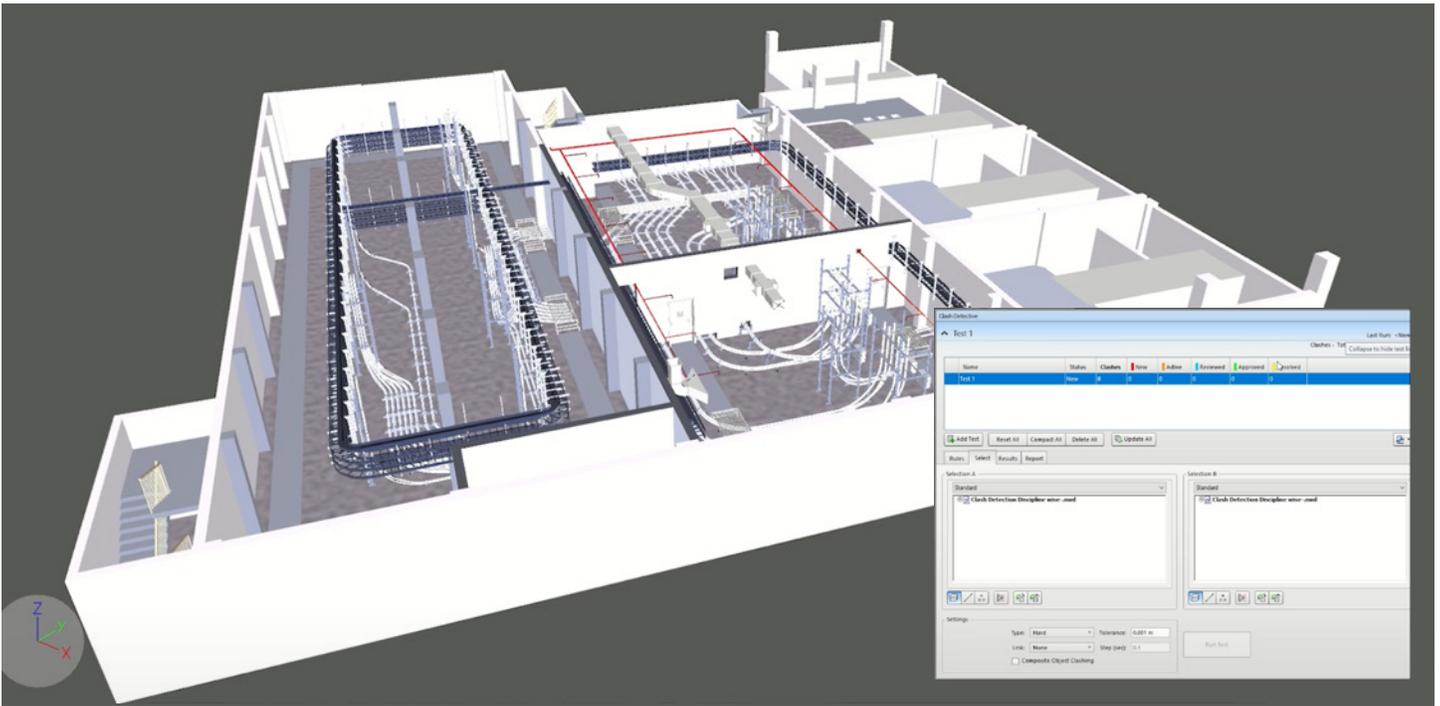
It also makes it possible to incorporate work-in-place quantities and quality data into the project schedule.



Model-based cost estimation

BIM models are capable of including cost statements throughout the project's life. Modifications during the project are automatically incorporated into the BIM models to more quickly adapt to new information such as changes in site conditions, quantities of materials needed, or schedule updates.

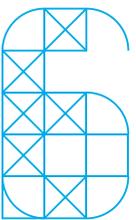
For example, in the planning and design phases, our teams can make accurate assessments of total costs and their impacts concerning any changes in the design, layout, or overall schedule.



Identify clashes and mitigate risk

Early in the design phase, having a virtual visual check-in helps resolve potential constructability issues and identify any soft or hard clashes . Once all of the individual models are integrated into a single source, our team is able to identify where each of these independent models will clash with each other before it happens on the construction site.

BIM allows us to quickly identify and resolve these clashes and collisions to improve project deliverables, reduce change orders, and maintain schedule requirements.



Empower customers and strengthen project handover

Early in the design phase, having a virtual visual check-in helps resolve potential constructability issues and identify any soft or hard clashes . Once all of the individual models are integrated into a single source, our team is able to identify where each of these independent models will clash with each other before it happens on the construction site.

BIM allows us to quickly identify and resolve these clashes and collisions to improve project deliverables, reduce change orders, and maintain schedule requirements.



**Shaping energy solutions
to empower sustainable
connectivity**



linxon.com